Claims

1. A recording medium used for storing data, comprising
       a digital stream generated by multiplexing a video stream
5   and a graphics stream, wherein:
       the graphics stream is a sequence of a plurality of
packets which include a packet containing control
information; and
       the control information indicates that graphics data
10   contained in a preceding packet in the sequence is to be
displayed at a predetermined time in a state of being overlaid
on the video stream.

2. The recording medium of Claim 1, wherein:
15   each of the plurality of packets belongs to any of a
plurality of display sets which are each used for producing
a graphics display;
       the graphics data and the control information belong
to different display sets; and
20   the graphics data is non-referenced graphics data that
is not referenced by control information which belongs to
a same display set as the non-referenced graphics data.

3. The recording medium of Claim 1, wherein:
25   the control information is completely contained within
the packet; and
       the predetermined time is shown by a time stamp written
in the packet.

4. The recording medium of Claim 1, wherein:

the graphics stream includes palette data in combination with the control information; and

the control information indicates that the graphics data is to be color-converted using the palette data.

5. The recording medium of Claim 4, wherein:

the display indicated by the control information is to update a previous display of the graphics data;

the control information has an update flag; and

the update flag shows whether the update is to be performed using only the palette data.

6. The recording medium of Claim 1, wherein:

the graphics stream includes window information;

the window information specifies a position, a height, and a width of a window on a screen, the window being an area in which the graphics data is to be rendered when overlaying the graphics data on the video stream; and

the control information indicates that the graphics data is to be positioned within the window.

7. A reproduction apparatus for reproducing a digital stream generated by multiplexing a video stream and a graphics stream, comprising:

a video decoder operable to decode the video stream to generate a moving picture; and

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a graphics decoder operable to decode the graphics stream to generate graphics, and overlay the graphics and the moving picture, wherein

upon reading control information in the graphics stream, the graphics decoder displays graphics which has been generated by decoding graphics data that precedes the control information in the graphics stream, based on the control information.

8. The reproduction apparatus of Claim 7, wherein:

the graphics stream includes a plurality of display sets each of which is used for producing a graphics display;

the graphics data is non-referenced graphics data that is not referenced by control information which belongs to a same display set as the non-referenced graphics data; and

upon reading the display set to which the non-referenced graphics data belongs, the graphics decoder decodes the non-referenced graphics data to generate the graphics and stores the generated graphics to an object buffer.

9. The reproduction apparatus of Claim 7, wherein:

the control information is completely contained within one packet; and

the graphics decoder displays the graphics at a time, on a reproduction time axis of the video stream, that is shown by a time stamp written in the packet.

10. The reproduction apparatus of Claim 7, wherein:

the graphics generated by decoding the graphics data
is expressed using a code value;

the reproduction apparatus further comprises

a lookup table unit operable to convert the code value
5   to a pixel value;

the graphics stream includes palette data in combination
with the control information; and

the graphics decoder sets the palette data in the lookup
table unit and instructs the lookup table unit to convert
10   the code value to the pixel value using the palette data.

11. The reproduction apparatus of Claim 10, wherein:

the display performed by the graphics decoder is to
update a previous display of the graphics;
15   the control information has an update flag; and

if the update flag shows a predetermined value, the
graphics decoder updates the previous display of the graphics
by setting the palette data in the lookup table unit.

20   12. The reproduction apparatus of Claim 7, wherein:

the graphics stream includes window information;

the window information specifies a part of a screen as
a graphics display window; and

the graphics decoder displays the graphics by clearing
25   the window specified by the window information and writing

the graphics into the window.

13. A method of recording onto a recording medium, comprising

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the steps of:

generating application data; and

recording the application data to the recording medium,

wherein:

5   the application data includes a digital stream generated

by multiplexing a video stream and a graphics stream;

the graphics stream is a sequence of a plurality of

packets which include a packet containing control

information; and

10   the control information indicates that graphics data

contained in a preceding packet in the sequence is to be

displayed at a predetermined time in a state of being overlaid

on the video stream.

15   14. A computer-readable program used in a computer for

reproducing a digital stream generated by multiplexing a video

stream and a graphics stream, comprising:

program code operable to cause the computer to decode

the video stream to generate a moving picture; and

20   program code operable to cause the computer to decode

the graphics stream to generate graphics, and overlay the

graphics and the moving picture, wherein

upon reading control information in the graphics stream,

graphics which has been generated by decoding graphics data

25   that precedes the control information in the graphics stream

is displayed based on the control information.

15. A method of reproducing a digital stream generated by

multiplexing a video stream and a graphics stream, comprising the steps of:

decoding the video stream to generate a moving picture; and

5   decoding the graphics stream to generate graphics, and overlaying the graphics and the moving picture, wherein upon reading control information in the graphics stream, the step of decoding the graphics stream displays graphics which has been generated by decoding graphics data that

10   precedes the control information in the graphics stream, based on the control information.